

LISTING OF THE CLAIMS

This listing of claims will replace all prior versions and listings of the claims in the application:

1-11. (Cancelled)

12. (Currently Amended) An isolated nucleic acid encoding ~~the a~~ truncated α -crystallin polypeptide ~~of claim 1~~, wherein the truncated polypeptide is a wild-type α -crystallin protein that lacks an N-terminal sequence and wherein the truncated polypeptide forms an aggregate having a mass of approximately 60,000 Daltons.

13. (Currently Amended) An isolated nucleic acid ~~encoding the truncated α -crystallin polypeptide~~ of claim ~~[[4]]~~ 12, wherein said N-terminal sequence comprises residues 1-51 of said wild-type protein.

14. (Currently Amended) An isolated nucleic acid that hybridizes, under stringent conditions, to the complement of ~~a the nucleic acid encoding the polypeptide~~ of claim ~~[[1]]~~ 12, wherein stringent conditions comprise incubating the nucleic acids at 68°C in 0.2xSSC or at 42°C in 50% formamide, 4xSSC.

15. (Currently Amended) An isolated nucleic acid that hybridizes, under stringent conditions, to the complement of ~~a the nucleic acid encoding the polypeptide~~ of claim ~~[[4]]~~ 13, wherein stringent conditions comprise incubating the nucleic acids at 68°C in 0.2xSSC or at 42°C in 50% formamide, 4xSSC.

16. (Currently Amended) The isolated nucleic acid of claim 12 that hybridizes, under stringent hybridization conditions, to the complement of a nucleic acid comprising the nucleotide sequence set forth in SEQ ID NO: 2 ~~(Fig. 2)~~, wherein stringent conditions comprise incubating the nucleic acids at 68°C in 0.2xSSC or at 42°C in 50% formamide, 4xSSC.

17. (Currently Amended) The isolated nucleic acid of claim 15 that hybridizes, under stringent hybridization conditions, to the complement of a nucleic acid comprising the nucleotide

sequence set forth in SEQ ID NO: 2 (~~Fig. 2~~), wherein stringent conditions comprise incubating the nucleic acids at 68°C in 0.2xSSC or at 42°C in 50% formamide, 4xSSC.

18. (Withdrawn, Currently Amended) An expression vector comprising: (a) a nucleic acid encoding a small heat shock protein (sHSP); and (b) a nucleic acid encoding a protein, polypeptide, or fragment thereof; wherein said nucleic acids are operatively associated with an expression control sequence; wherein said sHSP is selected from the group consisting of a truncated α -crystallin polypeptide; a chimeric polypeptide comprising (a) a truncated α -crystallin polypeptide and (b) thermophilic sHSP; or combinations thereof; and wherein said truncated α -crystallin polypeptide lacks an N-terminal sequence present in a wild-type α -crystallin protein and wherein the truncated polypeptide forms an aggregate having a mass of approximately 60,000 Daltons.

19. (Cancelled)

20. (Withdrawn, Currently Amended) The expression vector of claim ~~[[19]]~~ 18 wherein said chimeric polypeptide comprises a the truncated α -crystallin polypeptide and thermophilic sHSP.

21. (Cancelled)

22. (Withdrawn, Currently Amended) The expression vector of claim ~~[[21]]~~ 18 wherein said N-terminal sequence is hydrophobic.

23. (Withdrawn) The expression vector of claim 22 wherein said N-terminal sequence precedes a common domain in said wild-type protein.

24. (Withdrawn, Currently Amended) The expression vector of claim ~~[[21]]~~ 18 wherein said N-terminal sequence comprises residues 1-51 of said wild-type protein.

25. (Withdrawn, Currently Amended) The expression vector of claim ~~[[21]]~~ 18 comprising the sequence set forth in SEQ ID NO: 2.

26. (Withdrawn, Currently Amended) A method of enhancing expression of a protein in a host cell comprising coexpressing said protein with a small heat shock protein (sHSP); wherein said sHSP is selected from the group consisting of a truncated α -crystallin polypeptide; a chimeric polypeptide comprising (a) a truncated α -crystallin polypeptide and (b) a thermophilic sHSP; and combinations thereof; wherein said truncated polypeptide lacks an N-terminal sequence present in a wild-type protein; and wherein the truncated polypeptide forms an aggregate having a mass of approximately 60,000 Daltons.

27. (Cancelled)

28. (Withdrawn, Currently Amended) The method of claim [[27]] 26 wherein said chimeric polypeptide comprises a the truncated α -crystallin polypeptide and a the thermophilic sHSP.

29. (Cancelled)

30. (Withdrawn, Currently Amended) The method of claim [[29]] 26 wherein said N-terminal sequence is hydrophobic.

31. (Withdrawn) The method of claim 30 wherein said N-terminal sequence precedes a common domain in said wild-type protein.

32. (Withdrawn, Currently Amended) The method of claim [[29]] 26 wherein said N-terminal sequence comprises residues 1-51 of said wild-type protein.

33. (Withdrawn) The method of claim 32 wherein said truncated polypeptide comprises the sequence set forth in SEQ ID NO: 3.

34. (Withdrawn, Currently Amended) A thermotolerant host cell genetically modified to express a small heat shock protein (sHSP); wherein said sHSP is selected from the group consisting of a truncated α -crystallin polypeptide; a chimeric polypeptide comprising (a) a truncated

α -crystallin polypeptide and (b) a thermophilic sHSP; and combinations thereof; wherein said truncated polypeptide lacks an N-terminal sequence present in said wild-type protein and wherein the truncated polypeptide forms an aggregate having a mass of approximately 60,000 Daltons.

35. (Cancelled)

36. (Withdrawn, Currently Amended) The host cell of claim [[35]] 34 wherein said chimeric polypeptide comprises a the truncated α -crystallin polypeptide and a the thermophilic sHSP.

37. (Cancelled)

38. (Withdrawn, Currently Amended) The host cell of claim [[37]] 34 wherein said N-terminal sequence is hydrophobic.

39. (Withdrawn, Currently Amended) The host cell of claim [[37]] 34 wherein said N-terminal sequence precedes a common domain in said wild-type protein.

40. (Withdrawn, Currently Amended) The host cell of claim [[37]] 34 wherein said N-terminal sequence comprises residues 1-51 of said wild-type protein.

41. (Withdrawn) The host cell of claim 40 wherein said truncated polypeptide comprises the sequence set forth in SEQ ID NO: 3.

42. (New) An isolated nucleic acid encoding a truncated α -crystallin polypeptide, wherein the truncated polypeptide is a wild-type α -crystallin protein that lacks an N-terminal sequence, and wherein the truncated polypeptide retains the ability of the wild-type protein to prevent protein aggregation.

43. (New) An isolated nucleic acid that hybridizes, under stringent conditions, to the complement of the nucleic acid encoding the polypeptide of claim 42, wherein stringent conditions comprise incubating the nucleic acids at 68°C in 0.2xSSC or at 42°C in 50% formamide, 4xSSC.

44. (New) The isolated nucleic acid of claim 42 that hybridizes, under stringent hybridization conditions, to the complement of a nucleic acid comprising the nucleotide sequence set forth in SEQ ID NO: 2, wherein stringent conditions comprise incubating the nucleic acids at 68°C in 0.2xSSC or at 42°C in 50% formamide, 4xSSC.

45. (New) An expression vector comprising: (a) a nucleic acid encoding a small heat shock protein (sHSP); and (b) a nucleic acid encoding a protein, polypeptide, or fragment thereof; wherein said nucleic acids are operatively associated with an expression control sequence; wherein said sHSP is selected from the group consisting of a truncated α -crystallin polypeptide; a chimeric polypeptide comprising (a) a truncated α -crystallin polypeptide and (b) thermophilic sHSP; or combinations thereof; and wherein said truncated α -crystallin polypeptide lacks an N-terminal sequence present in a wild-type α -crystallin protein, and wherein the truncated polypeptide retains the ability of the wild-type protein to prevent protein aggregation.

46. (New) A method of enhancing expression of a protein in a host cell comprising coexpressing said protein with a small heat shock protein (sHSP); wherein said sHSP is selected from the group consisting of a truncated α -crystallin polypeptide; a chimeric polypeptide comprising (a) a truncated α -crystallin polypeptide and (b) a thermophilic sHSP; and combinations thereof; wherein said truncated polypeptide lacks an N-terminal sequence present in a wild-type protein, and wherein truncated polypeptide retains the ability of the wild-type protein to prevent protein aggregation.

47. (New) A thermotolerant host cell genetically modified to express a small heat shock protein (sHSP); wherein said sHSP is selected from the group consisting of a truncated α -crystallin polypeptide; a chimeric polypeptide comprising (a) a truncated α -crystallin polypeptide and (b) a thermophilic sHSP; and combinations thereof; wherein said truncated polypeptide lacks an N-

terminal sequence present in said wild-type protein, and wherein the truncated polypeptide retains the ability of the wild-type protein to prevent protein aggregation.

48. (New) The isolated nucleic acid of claim 12, wherein the truncated polypeptide comprises the amino acid sequence set forth in SEQ ID NO:3.

49. (New) The isolated nucleic acid of claim 49, wherein the nucleic acid comprises the nucleotide sequence set forth in SEQ ID NO:2.